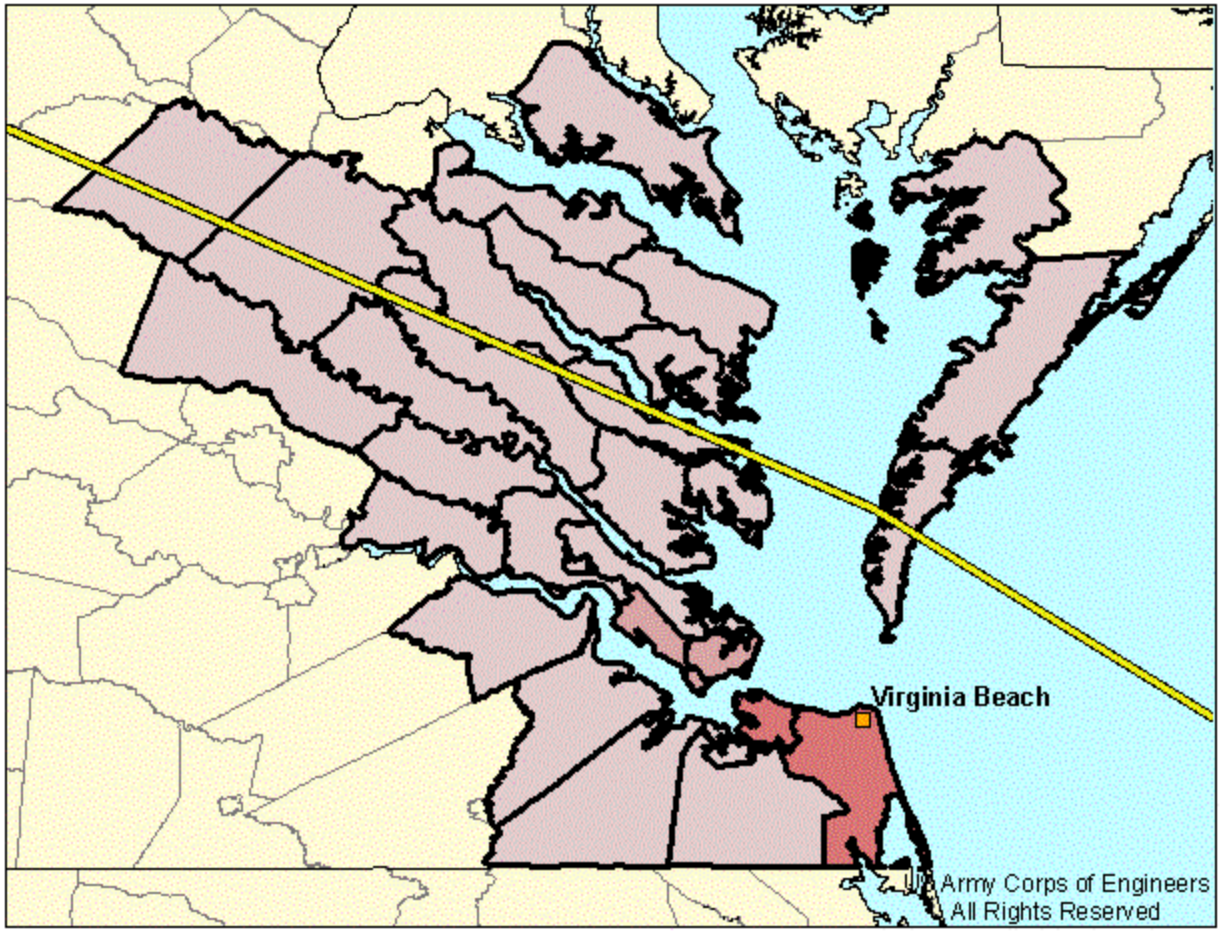
US Army Corps of Engineers

Hurricane Bret 1981 Debris Model

Landfall Plus About **12** Hours

For Planning Purposes Only!



Post Landfall Debris Model Results

Virginia - 1,876,000 Yards
Maryland - 13,000 Yards

Model results per County on following page

This model is based on a Category 1 storm making landfall near coastal Virginia.

Historic Track

Debris

- < 100,000 cubic yards
- 100,000 - 249,999 cubic yards
- 250,000 - 499,999 cubic yards
- 500,000 - 999,999 cubic yards
- >1,000,000 cubic yards

Information provided on this page displays a Category 1 storm making landfall near coastal Virginia. These projections are based on information from the NHC (1430 EDT 05/12/2008) forecast. The amount of debris forecasted is possible total volume, not necessarily the volume that may need to be removed with Federal funds, but does not include volume that may be covered by private insurance. Debris volume may include storm surge generated debris.

Details about this model may be obtained at http://www.englink.usace.army.mil
or contact Louisville District staff at DLL-CELRL-GIS@usace.army.mil

Hurricane Bret 1981 Debris Model

Generated By:
Siemsen, LRL 1500 EDT 05/12/2008

Sources:
HURREVAC
LRL-DEBRIS

US Army Corps of Engineers

Hurricane Bret 1981 Debris Model

Landfall Plus About 12 Hours

For Planning Purposes Only!

State	Yards per State	County	Yards per County
Maryland		Somerset	10,000
		St Mary's	3,000
Maryland	13,000		
Virginia		Accomack	63,000
		Caroline	30,000
		Charles City	< 1,000
		Chesapeake city	7,000
		Essex	23,000
		Gloucester	78,000
		Hampton City	194,000
		Hanover	< 1,000
		Isle Of Wight	< 1,000
		James City	78,000
		King And Queen	21,000
		King William	17,000
		Lancaster	40,000
		Mathews	34,000
		Middlesex	39,000
		New Kent	10,000
		Newport News city	224,000
		Norfolk City	304,000
		Northampton	40,000
		Northumberland	27,000
		Poquoson City	15,000
		Portsmouth city	11,000
		Richmond	13,000
		Spotsylvania	18,000
		Suffolk City	< 1,000
		Surry	< 1,000
		Virginia Beach city	494,000

State	Yards per State	County	Yards per County
Virginia		Westmoreland	9,000
(continued)		Williamsburg city	14,000
		York	73,000
Virginia	1,876,000		

The amount of debris forecasted is possible total volume, not necessarily the volume that may need to be removed with Federal funds, but does not include volume that may be covered by private insurance. Debris volume may include storm surge generated debris.

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Hurricane Bret 1981 Debris Model

Generated By:
Siemsen, LRL 1500 EDT 05/12/2008

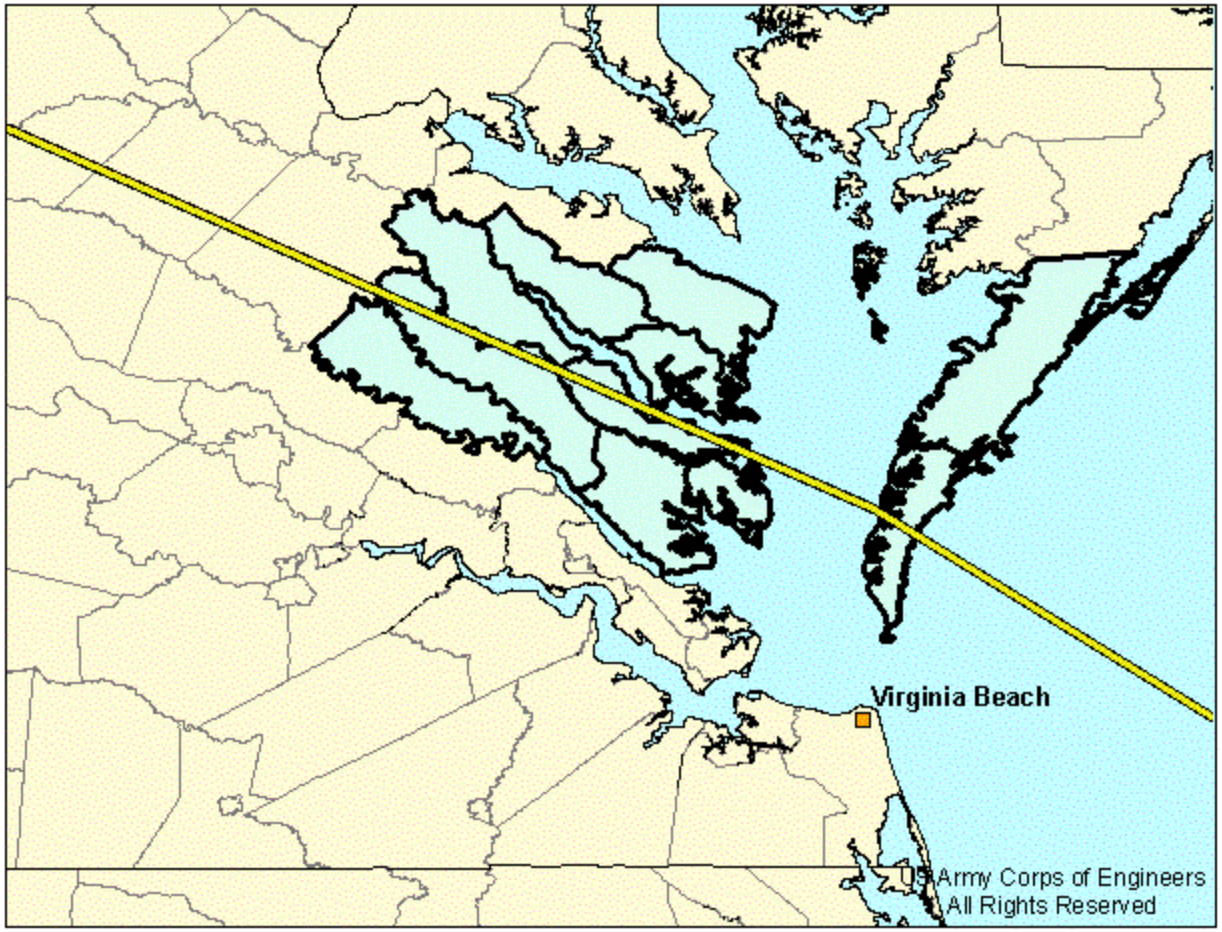
Sources:
HURREVAC
LRL-DEBRIS

US Army Corps of Engineers

Hurricane Bret 1981 Commodities Model

Landfall Plus About **12** Hours

For Planning Purposes Only!



Post Landfall Water Model Results

Day One / Day Two / Day Three
VA – 4/7/13 Truckloads

Model results per County on following page

This model is based on a Category 1 storm making landfall near coastal Virginia.

Historic Track

Commodities

- < 5 Trucks Each
- 5 - 10 Trucks Each
- 11 - 20 Trucks Each
- 21 - 40 Trucks Each
- > 40 Trucks Each

Information provided on this page displays a Category 1 storm making landfall near coastal Virginia. These projections are based on information from the NHC ***(1430 EDT 05/12/2008)*** forecast. The amount of commodities forecasted is based on Mission Guide Book requirements and SME input. The graphic represents single day needs with full distribution system in place and operating.

Details about this model may be obtained at http://www.englink.usace.army.mil
or contact Louisville District staff at DLL-CELRL-GIS@usace.army.mil

Hurricane Bret 1981 Commodities Model	
Generated By: Siemsen, LRL 1500 EDT 05/12/2008	
Sources: HURREVAC LRL-DEBRIS	

US Army Corps of Engineers

Hurricane Bret 1981 Commodities Model

Landfall Plus About 12 Hours

For Planning Purposes Only!

State	Truckloads per State	County	Truckloads per County
Virginia		Accomack	1
		Essex	1
		Gloucester	2
		King And Queen	1
		King William	1
		Lancaster	1
		Mathews	1
		Middlesex	1
		Northampton	2
		Northumberland	1
		Richmond	1
Virginia	13		

The amount of commodities forecasted is based on Mission Guide Book requirements and SME input and the above table indicates suggested needs based on phased deployment of a commodities distribution system.

Details about this model may be obtained at http://www.englink.usace.army.mil
or contact Louisville District staff at DLL-CELRL-GIS@usace.army.mil

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Hurricane Bret 1981 Commodities Model

Generated By:
Siemsen, LRL 1500 EDT 05/12/2008

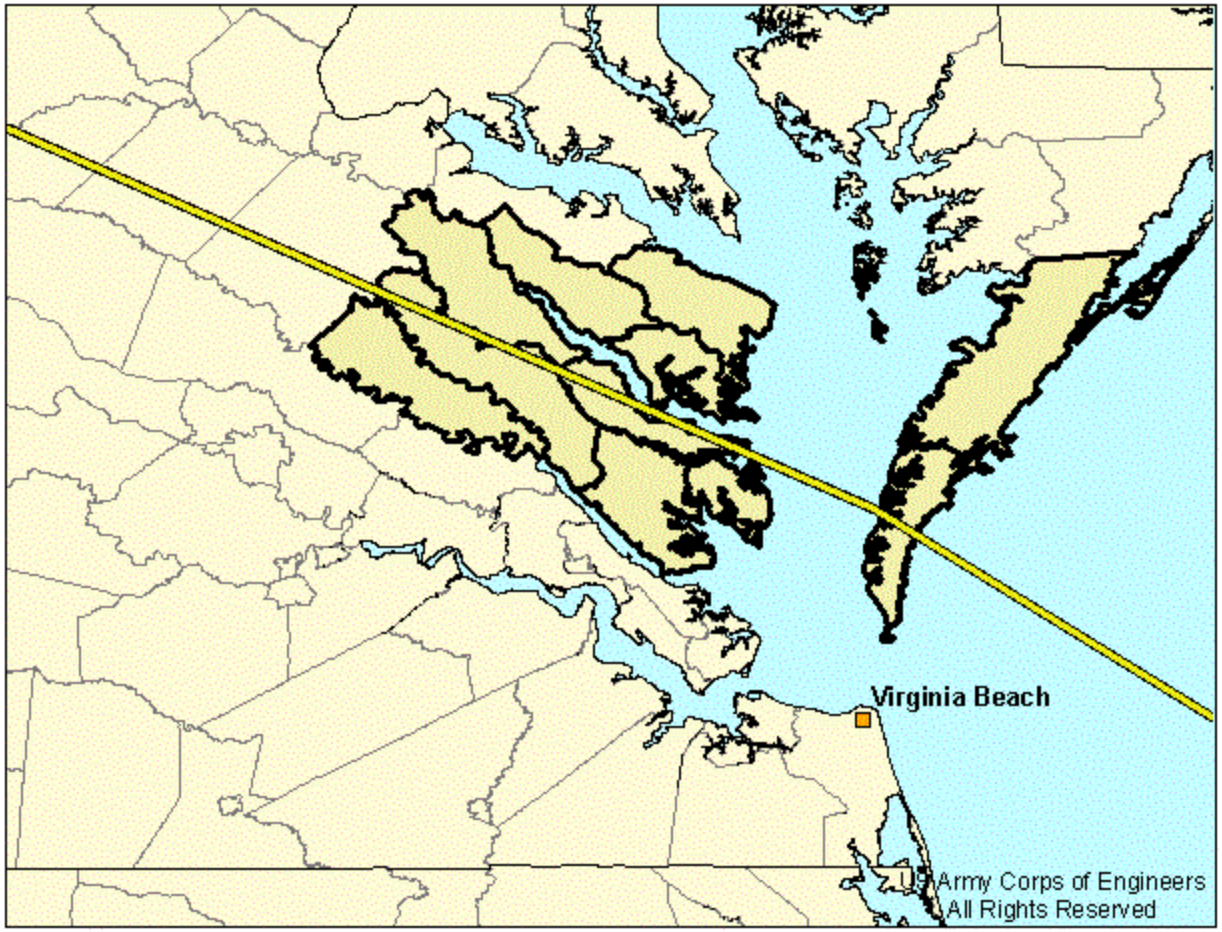
Sources:
HURREVAC
LRL-DEBRIS

US Army Corps of Engineers

Hurricane Bret 1981 Temporary Roofing Model

Landfall Plus About 12 Hours

For Planning Purposes Only!



Post Landfall Temporary Roofing Model Results

Virginia - 1,200

Model results per County on following page

This model is based on a Category 1 storm making landfall near coastal Virginia.

Historic Track

Temporary Roofing

- < 2,000 units
- 2,000 - 3,999 units
- 4,000 - 5,999 units
- 6,000 - 9,999 units
- > 10,000 units

Information provided on this page displays a Category 1 storm making landfall near coastal Virginia. These projections are based on information from the NHC (1430 EDT 05/12/2008) forecast. Temporary roofing is based on 3% in CAT 1.

Details about this model may be obtained at http://www.englink.usace.army.mil or contact Louisville District staff at DLL-CELRL-GIS@usace.army.mil

Hurricane Bret 1981 Roofing Model	
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Sources: HURREVAC LRL-DEBRIS	Page 5 of 12

US Army Corps of Engineers

Hurricane Bret 1981 Temporary Roofing Model

Landfall Plus About 12 Hours

For Planning Purposes Only!

State	House Units per State	County	House Units per County
Virginia		Accomack	200
		Essex	< 100
		Gloucester	200
		King And Queen	< 100
		King William	< 100
		Lancaster	200
		Mathews	200
		Middlesex	200
		Northampton	200
		Northumberland	< 100
		Richmond	< 100
Virginia	1,200		

Temporary roofing is based on 3% in CAT 1.

Details about this model may be obtained at http://www.englink.usace.army.mil
or contact Louisville District staff at DLL-CELRL-GIS@usace.army.mil

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Hurricane Bret 1981 Roofing Model

Generated By:
Siemsen, LRL 1500 EDT 05/12/2008

Sources:
HURREVAC
LRL-DEBRIS

Hurricane Bret 1981 Temporary Housing Model

US Army Corps of Engineers

Landfall Plus About 12 Hours

For Planning Purposes Only!

Post Landfall Temporary Housing Model Results

Model results per County on following page

This model is based on a Category 1 storm making landfall near coastal Virginia.

Historic Track

Temporary Housing

- < 2,000 units
- 2,000 - 3,999 units
- 4,000 - 5,999 units
- 6,000 - 9,999 units
- > 10,000 units

Information provided on this page displays a Category 1 storm making landfall near coastal Virginia. These projections are based on information from the NHC (1430 EDT 05/12/2008) forecast. Temporary housing is based on nothing.

Details about this model may be obtained at http://www.englink.usace.army.mil or contact Louisville District staff at DLL-CELRL-GIS@usace.army.mil

Hurricane Bret 1981 Housing Model	
Generated By: Siemsen, LRL 1500 EDT 05/12/2008	
Sources: HURREVAC LRL-DEBRIS	Page 7 of 12

US Army Corps of Engineers

Hurricane Bret 1981 Temporary Housing Model

Landfall Plus About 12 Hours

For Planning Purposes Only!

State	House Units per State	County	House Units per County
	There is no housing demand with these model assumptions		

Temporary housing is based on nothing.

Details about this model may be obtained at http://www.englink.usace.army.mil
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Hurricane Bret 1981 Housing Model

Generated By:
Siemsen, LRL 1500 EDT 05/12/2008

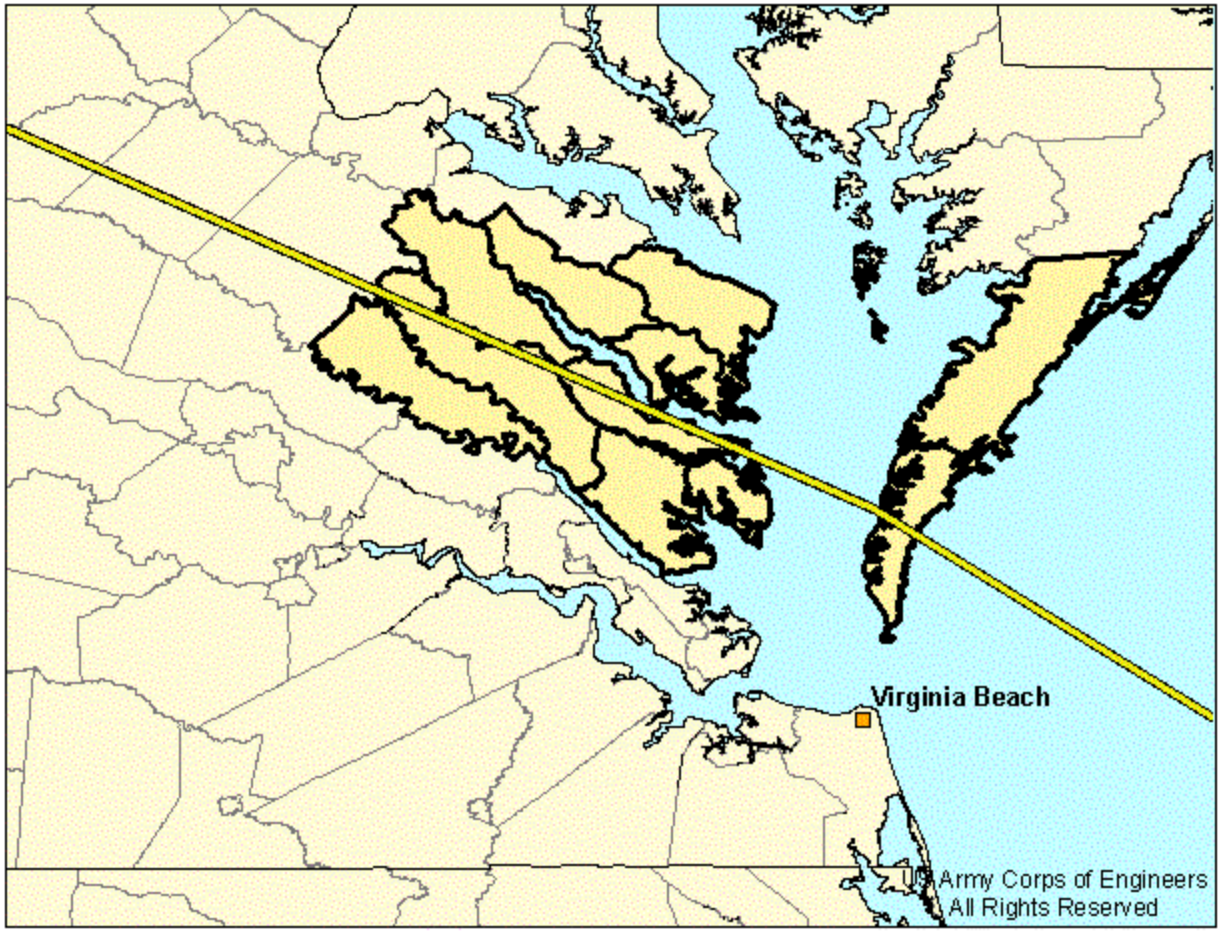
Sources:
HURREVAC
LRL-DEBRIS

US Army Corps of Engineers

Hurricane Bret 1981 Population Model

Landfall Plus About 12 Hours

For Planning Purposes Only!



Post Landfall Population Model Results

Virginia - 87,000

Model results per County on following page

This model is based on a Category 1 storm making landfall near coastal Virginia.

Historic Track

Population

- < 25,000 persons
- 25,000 - 99,999 persons
- 100,000 - 174,999 persons
- 175,000 - 249,999 persons
- > 250,000 persons

Information provided on this page displays a Category 1 storm making landfall near coastal Virginia. These projections are based on information from the NHC (1430 EDT 05/12/2008) forecast. The numbers of persons included in this model output are those that would be included within estimated hurricane force winds (Census 2000 values adjusted to July 2006 values).

Details about this model may be obtained at http://www.englink.usace.army.mil or contact Louisville District staff at DLL-CELRL-GIS@usace.army.mil

Hurricane Bret 1981 Population Model	
Generated By: Siemsen, LRL 1500 EDT 05/12/2008	
Sources: HURREVAC LRL-DEBRIS	

US Army Corps of Engineers

Hurricane Bret 1981 Population Model

Landfall Plus About 12 Hours

For Planning Purposes Only!

State	Population per State	County	Population per County
Virginia		Accomack	11,000
		Essex	4,000
		Gloucester	16,000
		King And Queen	4,000
		King William	< 1,000
		Lancaster	12,000
		Mathews	10,000
		Middlesex	11,000
		Northampton	14,000
		Northumberland	3,000
		Richmond	2,000
Virginia	87,000		

The number of persons estimated to be within the hurricane force winds comes from Census 2000 values adjusted to July 2006 values.

Details about this model may be obtained at http://www.englink.usace.army.mil
or contact Louisville District staff at DLL-CELRL-GIS@usace.army.mil

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Hurricane Bret 1981 Population Model

Generated By:
Siemsen, LRL 1500 EDT 05/12/2008

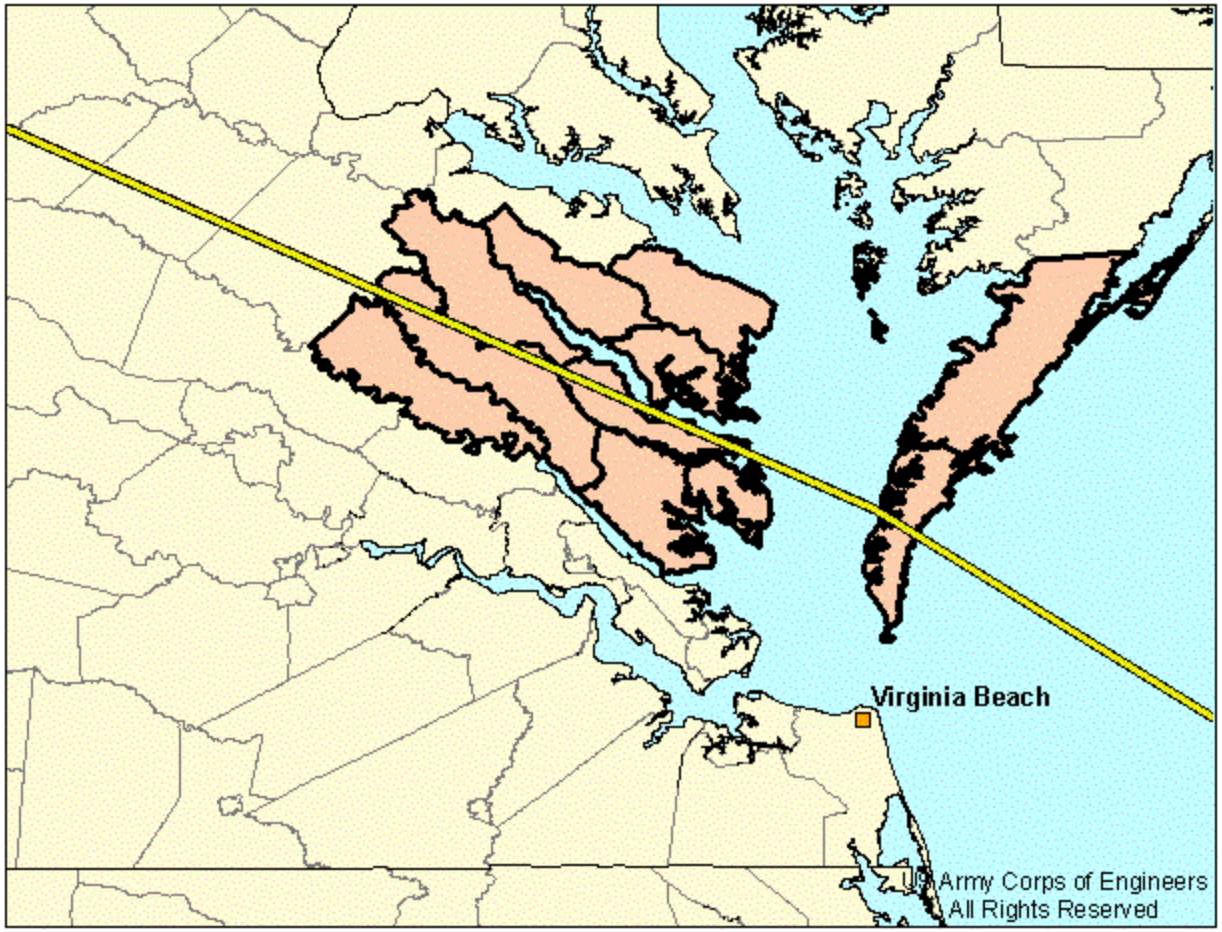
Sources:
HURREVAC
LRL-DEBRIS

US Army Corps of Engineers

Hurricane Bret 1981 Households Model

Landfall Plus About 12 Hours

For Planning Purposes Only!



0 50 100 Miles

Post Landfall Households Model Results

Virginia - 37,000

Model results per County on following page

This model is based on a Category 1 storm making landfall near coastal Virginia.

Historic Track

Households

- < 7,500 households
- 7,500 - 14,999 households
- 15,000 - 24,999 households
- 25,000 - 49,999 households
- > 50000 households

Information provided on this page displays a Category 1 storm making landfall near coastal Virginia. These projections are based on information from the NHC (1430 EDT 05/12/2008) forecast. The numbers of households included in this model output are those that would be included within estimated hurricane force winds (Census 2000 values adjusted to July 2006 values).

Details about this model may be obtained at http://www.englink.usace.army.mil or contact Louisville District staff at DLL-CELRL-GIS@usace.army.mil

Hurricane Bret 1981 Households Model	
Generated By: Siemsen, LRL 1500 EDT 05/12/2008	
Sources: HURREVAC LRL-DEBRIS	

US Army Corps of Engineers

Hurricane Bret 1981 Households Model

Landfall Plus About 12 Hours

For Planning Purposes Only!

State	Households per State	County	Households per County
Virginia		Accomack	5,000
		Essex	2,000
		Gloucester	6,000
		King And Queen	2,000
		King William	< 1,000
		Lancaster	5,000
		Mathews	4,000
		Middlesex	5,000
		Northampton	6,000
		Northumberland	2,000
		Richmond	< 1,000
Virginia	37,000		

The number of households estimated to be within the hurricane force winds comes from Census 2000 values adjusted to July 2006 values.

Details about this model may be obtained at http://www.englink.usace.army.mil or contact Louisville District staff at DLL-CELRL-GIS@usace.army.mil

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Hurricane Bret 1981 Households Model

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LRL-DEBRIS